

ABSTRACT OF THE DISCLOSURE

A heat sink comprises pins, located in a holding base plate, that are positioned so that the end of each pin is exposed and attached by a thermally conductive material to a heat generating source, such as an internal electronic insulator assembly or a semiconductor die. The pins have various diameters and shapes, such as circular, square, diamond, helical, elliptical, triangular and rectangular that can be made from any thermally conductive material, such as metals, ceramics, organic and inorganic compounds. The pins are located inside a holding base plate that can comprise a medium that will support the structure, such as metals, plastics, ceramics, polymeric, organic and inorganic compounds. The pins are arranged in a geometric pattern of any design shape, repetition of such patterns and concentration of such patterns. The ends of the pins can be straight flat cut or of nail head design.